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ABSTRACT

A project was conducted at Gateway Vocational Technical School in Arkansas to reduce effectively the high percentage of students who discontinue vocational training before completing the course. This would be accomplished by assisting potential students with realistic career training decisions. The project involved the following four steps: (1) development and implementation of a pre-enrollment specific aptitude evaluation program for each training area offered; (2) development of basic orientation materials for use in acquainting potential students with career fields prior to enrollment and with special emphasis on non-traditional roles and promoting equal access to vocational programs; (3) further development of the job sampling process by establishing standards or norms used to predict an applicant's aptitude for a given course prior to entry, and (4) implementation of efforts to improve staff competencies, including an increased awareness of non-traditional roles through inservice training and promotion of these roles in aiding students in making career choices. Both students and staff felt that the specific career orientation evaluation has had a positive impact on potential students and staff, and despite the fact that Gateway's dropout rate is still too high, enrollment has substantially increased since the project's inception. (MN)

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FINAL REPORT

PROJECT NUMBER D-7832

SPECIFIC CAREER ORIENTATION READINESS EVALUATION

Conducted By

Gateway Vocational Technical School
P. O. Box 3350
Batesville, Arkansas 72501

In Cooperation With

Arkansas Department of Education
Division of Vocational Technical Education

CE028640

Marilyn Bryant, Project Director

September, 1980

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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STATEMENT OF PROBLEMS

Gateway Vocational Technical School, a state supported institution, completed its second year of operation June 30, 1977. The school's service area includes Independence County and Stone County, Arkansas, an area which has been traditionally oriented toward agriculture until recent years.

Gateway has served approximately two hundred (200) full-time students each year since its inception in the following training areas: Automotive Mechanics, Building Trades, Inspection Precision Measurement, Industrial Equipment Mechanics, Office Occupations, and Licensed Practical Nursing.

The school has had a significant impact in providing trained personnel for business and industry located in its service area. It is expected that the area served by the school will become even more industrialized in the future, thereby creating greater demands for the school's services in training skilled personnel.

An area of major concern has been the high percentage of students who "drop out" or change courses after beginning training. The percentage experienced during the 1976-77 school year was 40%. A breakdown of these percentages, by department, is shown on the table:

DEPARTMENT	PERCENTAGE
Licensed Practical Nursing	16
Office Occupations	59
Auto Mechanics	47
Building Trades	16
Inspection & Precision Measurement	30
Industrial Equipment Maintenance	36

It was apparent that these percentage rates were far in excess of the normal attrition rate experienced by other comparable vocational schools. It was also apparent that action should be taken to alleviate the critical situation.

It was believed that several factors contribute to these high "drop out" percentages. Gateway is located in an area with a high population of socio-economically deprived individuals. Many students drawn from this group to Gateway for Vocational Training cannot adjust or progress in their training; as a result, these individuals drop out of school. Many of the students who drop out have inadequate educational backgrounds and/or career awareness which precludes them making a meaningful career decision prior to enrolling in school.

Another factor contributing to the problem was the fact that Gateway Vo-Tech was not staffed with a Director of Student Services. Consequently, students who were potential drop outs due to psychological and/or poor educational background were not always recognized and given proper career guidance prior to enrollment. Vocational guidance was done

by an assistant Director or the Director on an "as needed basis." This system proved to be ineffective because very little, if any, guidance was accomplished before a student entered school. It was believed that adequate pre-enrollment career orientation would greatly reduce the number of students who became dissatisfied and dropped out of school.

The problem was also increased by the number of students who desired re-training after having worked for a period of time. These individuals often dropped out because they could not cope with the financial and personal adjustments which had to be made.

PURPOSE AND GOALS

The overall purpose of this proposed project was to effectively reduce the high percentage of students who discontinued vocational training before completing the course. More specifically the goals of the program were:

A. To develop and implement a pre-enrollment specific aptitude evaluation program for each of the training areas offered.

B. To develop basic orientation materials, to be used in acquainting potential students with career fields prior to enrollment. The basic orientation materials will develop an awareness of non-traditional roles and promote equal access to vocational programs.

C. To further develop the job sampling process by establishing standards or norms which can be used to predict with a reasonable degree of accuracy an applicants aptitude for a given course prior to entry.

D. Efforts to improve staff competencies will include an increased awareness of non-traditional roles through in-service training and promotion of these roles in aiding students in making career choices.

RESULTS OR BENEFITS EXPECTED

It was expected that the proposed activities would result in an effective approach to providing pre-enrollment career guidance, which would reduce the high percentage of drop outs experienced at Gateway. Moreover, it was expected that the program would result in a workable plan to enhance the students' ability to progress through a vocational occupation course. Also, it was expected to result in a staff with increased competencies in the identification, solution, and referral of student needs.

Specifically, the results and benefits to be derived from the project are as follows:

A. Reduction in the "drop-out" rate, from the present 40% to 20% the first year and a further reduction to 15-18% the second year.

B. Retention of students until completion of a given course which will enable them to become more productive citizens.

C. An increased awareness and entry into non-traditional roles in vocational programs.

PERFORMANCE OBJECTIVES

The performance objectives for the project were as follows:

Objective Number 1

The project staff will develop and/or procure pre-enrollment orientation materials and job sampling stations to enhance the students' ability to make meaningful decisions for vocational training. It is expected that (a) 100 percent of the instructional staff will be involved in the developmental process and (b) pre-enrollment materials and job sampling tasks will be available for each training area.

Objective Number 2

The project staff will demonstrate ability to infuse the pre-enrollment strategies for effective guidance of potential students. It is expected that (a) all training areas will utilize the concept, (b) the pre-enrollment strategies will be used in processing all potential students, (c) 80 percent of the students will indicate the pre-enrollment orientation activities were helpful in deciding what training program to enroll in, and (d) 70 percent of the students will enter a training program compatible with their interest, aptitude and ability.

Objective Number 3

The project staff will demonstrate the effectiveness of the pre-enrollment career orientation concept to increase the ability of students in making realistic career training decisions as evidenced by a reduction in the student drop-out rate. It is expected that these expanded student guidance services will reduce the overall drop-out rate to 20% the first year of implementation and 15-18% by the end of the project.

Objective Number 4

Positive direction will be given to equal access of students in vocational programs.

Objective Number 5

Basic orientation materials will address the issue of equal access in vocational education. An awareness of non-traditional opportunities will be made available to students selecting a training program.

METHODS AND PROCEDURES

This project was designed to make a concerted effort to assist potential students with realistic career training decisions. The rationale and prime focus for attempting this exemplary program was based on the belief that many students know very little about career options, training requirements and self appraisal.

This exemplary program served as a vehicle to coordinate innovative approaches for providing potential students with career awareness information, job sampling tasks, and an assessment of aptitude, ability, and interest.

The duration of the project was three years. One full-time staff member was employed as project director to work with the present school staff in the development and implementation of the proposed activities. This individual worked under the direct supervision of the Director of Gateway Vocational Technical School in Batesville.

During the first year, the major thrust was to develop, procure, and coordinate strategies which would be more responsive to the career needs of potential students. These strategies were guidance oriented and involved written test instruments, orientation information, simulated exercises and actual job tasks. All potential trainees were administered the General Aptitude Test Battery (GATB) before participating in other career awareness activities.

General information was presented about vocational course offerings at Gateway Vocational Technical School. This

was implemented with a twenty minute audio-visual presentation of job training areas. The presentation was developed in cooperation with the Media Implementation Center in Little Rock and made available to potential students who were interested in training but had no specific vocational goal. Approximately 150 potential students viewed the presentation as well as the instructional and administrative staff of four vocational technical schools. It was anticipated that other schools might want to develop similar presentations. Additionally, the Career Awareness Laboratory was made available to potential students who lacked general career objectives.

In-service training was scheduled with instructors at Gateway Vocational Technical School and White River Vocational Technical School to discuss the benefits and potential use of specific department orientation. It was felt that the Specific Career Orientation Evaluation should be instructor developed. The coordinator met with each department instructor and the orientation material was developed on schedule.

Department needs assessment was conducted with enrolled students in relation to the selected course and career field information. It was believed that a student point of view would be helpful in developing the orientation material.

A schedule for completing department material was developed and the material was field tested with one group. Initial orientation materials were completed in all departments by June 1, 1978, and potential students participated in department orientation.

Instructors were assisted in evaluating department

orientation material and revising as necessary. Overall, the first orientation activities required too much time and it was necessary to limit the orientation to one hour in each department. Additionally, instructors had a tendency to develop tests or written activities instead of "hands on" or job related activities. Throughout the development of the program it was necessary for instructors to continue to evaluate and revise the orientation material.

A series of job sampling tasks were developed for each training area offered. The job sampling activities were technical in nature; therefore, the project director with the aid of the instructional staff in each department determined what tasks best represented training expectations. These were simple tasks that represented common occupational activities for the respective program and the hands-on activities did not require a great amount of time to perform. A sample orientation packet is included in the appendix.

The job sampling tasks and other pre-enrollment activities were completed in order of need. The greatest percentage of drop-outs occurred in Office Occupations, followed very closely by Auto Mechanics. The pre-enrollment strategies were completed for Office Occupations in February, 1978, and Auto Mechanics in March, 1978. The other four followed in priority order. Development of these materials involved the entire instructional staff and periodic inservice training was an integral part of the project endeavors.

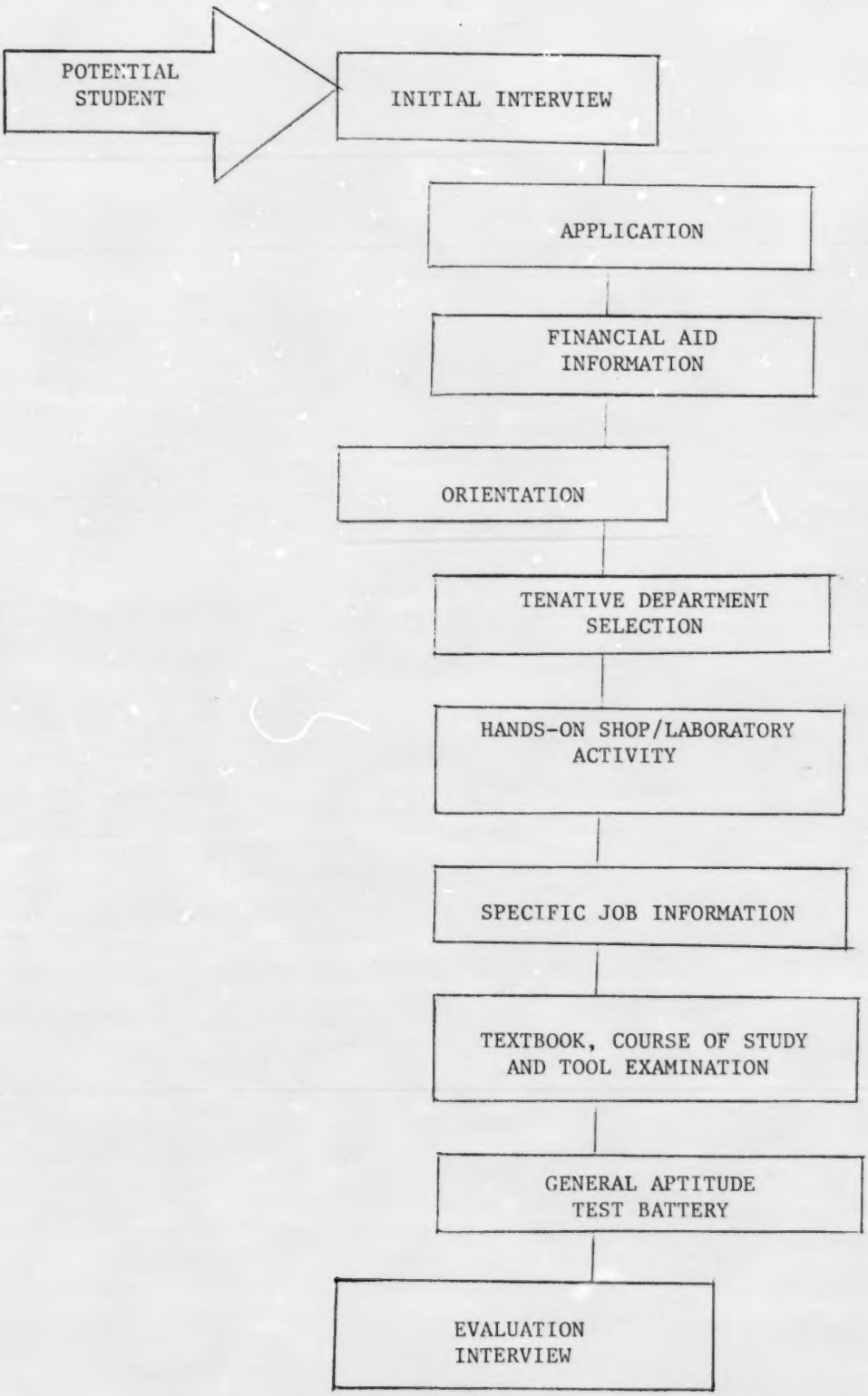
After the materials and strategies were developed for a particular training area, the next step was to field test the

concepts with potential students. The school operates on an open entry-open exit system; therefore, students were applying for admission throughout the year. An area was established in each training department where students were given job sampling and/or orientation activities. The specific training area orientation enabled an individual to actually learn what a given occupation entails. The pre-enrollment sessions were not used as a tool to counsel potential students out of a program; but to enable students to make more realistic training decisions.

Potential students were scheduled for pre-enrollment orientation, testing, and individual conferences. (See Chart on page 10) Orientation was held in all departments, one afternoon each week, from 3:00-4:00 p.m. Potential students were notified in advance and instructors were made aware of the number of participants to expect. It was felt that orientation should be conducted when regular students were not in the classroom or shop so that full attention could be given to the orientation. Scheduled department orientation varied, depending on the number of training slots available.

A record was kept of students participating in orientation and their enrollment status. The program coordinator maintained a list of all potential students who participated in orientation as well as their enrollment status. Department instructors maintained individual scores on specific orientation activities.

During these pre-enrollment sessions, each individual


POTENTIAL STUDENT
INITIAL INTERVIEW
APPLICATION
FINANCIAL AID INFORMATION
ORIENTATION
TENATIVE DEPARTMENT SELECTION
HANDS-ON SHOP/LABORATORY ACTIVITY
SPECIFIC JOB INFORMATION
TEXTBOOK, COURSE OF STUDY AND TOOL EXAMINATION
GENERAL APTITUDE TEST BATTERY
EVALUATION INTERVIEW

was informed what he/she could expect concerning school policies, employment opportunities and salary potential of each training area. The applicant was encouraged to ask questions about the school and occupational fields. It was felt that a clear understanding prior to enrollment would substantially reduce the percentage of students who discontinue school prior to completion. The reduction in percentage of early drop-outs was the number one priority of this exemplary program.

Counseling services were expanded to students. Since all students participated in an evaluation interview with the program coordinator, students continued to seek educational, personal, and financial counseling services. The need for counseling services to reduce the drop-out rate was emphasized in the final report of Burl Lieblong, Project Director, Crowley's Ridge Vocational Technical School, and Don McLendon in a project utilizing professional counseling services in vocational technical education. They stated that the counseling services were not only beneficial but were services that would be used again and were overwhelmingly requested on a voluntary basis as students identified themselves as considering dropping out.

The program materials and findings were shared with other state vocational technical schools in Arkansas. The program coordinator has presented an overview of SCORE to the staffs of four Vocational Technical Schools. Additionally, a program progress report was shared with all school directors at a staff meeting and followed up with the mailing of a

program abstract to each school. A copy of the final project report was given to each Vocational Technical School in Arkansas.

EVALUATION

The evaluation of this project involved the performance objectives stated in the proposal.

Objective Number 1

All members of the instructional staff participated in the development process which included pre-enrollment materials and job sampling tasks in each training area. The concept of enhancing student ability in making meaningful vocational training choices was enthusiastically accepted by the staff. Objective number one was effectively carried out.

Objective Number 2

The project coordinator and the instructional staff used the pre-enrollment strategies for guiding potential students. Individual conferences were held with all potential students to help them assess their vocational, career, and educational objectives as well as their strengths and abilities. (See sample orientation evaluation in the Appendix.)

All training areas utilized the concept and all potential students participated in the pre-enrollment assessment.

The follow-up survey of students who participated in orientation indicated that over 90 percent felt that pre-enrollment orientation was helpful. Eighty-four percent

of the students enrolled in a training program compatible with their interests, aptitude, and ability. These percentages exceeded the expected results stated in the proposal.

Objective Number 3

A major objective in this project was to reduce the drop-out rate of students. It was expected that these expanded student guidance services would reduce the overall drop-out rate to 20 percent the first year and 15-18 percent by the end of the project. The Specific Career Orientation Program improved student services and resulted in 27 percent drop rate at Gateway during the 1979-80 school year. At the inception of the program in 1977, the overall drop rate was at 40 percent. Although Objective Three was not fully achieved, the 13 percent overall reduction indicates a measure of success. The drop rate of specific training areas are shown in the following chart:

GATEWAY VOCATIONAL SCHOOL

Department	1978-79	1979-80
Auto Mechanics	63%	40%
Building Trades	40%	12%
Industrial Maintenance	29%	37%
Inspection	50%	28%
Licensed Nursing	14%	17%
Office Occupations	52%	33%
Total	41%	27%

Additionally, the drop rate at Gateway was significantly less than the majority of the 23 Vocational Technical Schools in the state. Gateway ranked sixth in the percent of students enrolled who completed their program. (See Appendix)

The Specific Career Orientation Evaluation program was field tested at White River Vocational Technical School at Newport. It was originally anticipated that the orientation program would also include Ozark Vocational School at Melbourne but the program was not fully developed at that location.

The staff at White River was most cooperative and developed orientation material in all departments. A comparison of the department drop rates are shown on the chart:

White River	78-79	79-80
Auto Mechanics	66%	47%
Appliance Repair	50%	25%
Carpentry	78%	40%
Diesel Mechanic	57%	43%
Nursing (LPN)	33%	26%
Office Occupations	64%	66%
Welding	49%	33%
Total	57%	45%

The student completion rate at White River is still low but improved overall by 12 percent. The staff is continuing to refine the orientation material and a recent student orientation evaluation yielded the results shown. (Note the following page)

Objective Number 4

Positive direction was given to equal access. Potential students were given non-biased course information and equal access was emphasized in all areas. During this project, every department had students pursuing non-traditional training.

Objective Number 5

An awareness of non-traditional opportunities was presented to students during orientation. All handouts were examined for sex-biased language and the "hands-on" activities gave non-traditional students an opportunity to see themselves as well as experiment in a job setting. Students were encouraged to participate in more than one department orientation and encouraged to explore non-traditional roles.

FINDINGS AND INTERPRETIONS

The project coordinator and the instructional staff developed a specific career orientation program. As a result of this project, it was hoped that the rate of student program completions would be increased. Providing vocational assessment prior to enrollment was extremely

helpful to potential students and the instructional staff.

1. The drop rate was reduced at Gateway and White River Vocational Schools. Students entered areas of training with an aptitude for the selected area as well as specific career information.

2. Enrolled students felt that the Specific Career Orientation was helpful and should be continued. A six month follow-up evaluation of orientation indicated that ninety-six (96) percent of the students indicated that they were sure of their training choice and were aware of skill expectation, job information, course requirements and expenses. Students felt that they were prepared to enter class the first day and that Specific Career Orientation should be continued.

3. Faculty evaluation indicated that orientation was helpful. During the last two years of the project, staff members were asked to respond to the effectiveness of orientation. All staff members responded favorably to the project. It was felt that a systematic, regular scheduled orientation program was the most effective. Additionally, staff members indicated that more competency was acquired in aiding students in career and course selection.

4. Counselor availability improved student retention. The program coordinator was based at Gateway; thus, students had access to a credential counselor. This could be one reason that the drop-out percentage was lower at Gateway.

5. Student attrition rate was 16 percent after orientation. Potential students were able to decide if they wanted

to commit to job skill training prior to entry. It is felt that the student drop rate would have been higher without Specific Career Orientation. This is evidenced by the 16 percent that did not enter training after orientation.

6. Sex balance was improved with orientation. Students enrolling in non-traditional roles have increased. The open, basic orientation gave students an opportunity to visualize and test non-traditional job skills prior to enrollment. Additionally, students became aware of equal access to vocational programs.

7. Staff awareness of non-traditional roles was increased. Staff members were able to promote and aid students in making non-traditional career choices.

8. Prior job skill knowledge did not affect course completion rate. Students who had no previous knowledge of some job skills were able to complete training. Thus, low score on shop or laboratory tasks could not be used to predict course completion.

9. A pattern of performance standards and norms was not consistent in all departments. The orientation scores were predictive of student completion in the area of office occupations but not in the trade and industry area.

10. Personal assessment with adequate knowledge seemed to be the best indicator of course completion. Students who felt they were capable of completing the course did so.

IMPLICATIONS

Potential students are becoming more and more aware of

the need for job skill training; however, many lack the knowledge of specific job skills necessary for employment, have unrealistic job expectations, and lack information about employability and job retention.

Specific Career Orientation Evaluation addresses the needs of these students. Students are only able to assess their career goals when adequate information is available.

Orientation Development

The Specific Career Orientation Evaluation program could be easily developed at other vocational schools. Department instructors should be involved in the program development as they are aware of job demands and skill requirements in their specialized areas.

Student Services

Development of an on-going comprehensive plan for student services would benefit students. Students are only able to evaluate their training goals when specific information is available to them. A continued effort could be sustained and coordinated in the following areas:

Academic Evaluation. Potential students should be aware of their present reading and math levels. Additionally, they should be aware of the levels necessary to function in their selected training area.

Aptitude and Interest Testing. Adequate aptitude and interest test could be given and interpreted to potential students prior to enrollment.

Related Courses. Curriculum additions are needed in

the basic skills area i.e., reading and math. Many students are academically disadvantaged and consequently, need remedial work before they can continue in job skill training. It was found that most vocational students read at the sixth to seventh grade level, but course textbooks were at grades twelve and fourteen.

Counseling. Student services at vocational technical schools should include counseling. Approximately, 70 percent of the students felt that personal problems were the major cause of vocational technical school drop-outs. A staff counselor would assist individuals and groups with personal needs as well as refer clients to appropiate agencies.

Financial Aid Counseling. Students need help in planning a budget for their training period. Simply giving them overall consumer information is not enough. The Basic Education Grant will not provide enough funds for heads of households. Many students are unable to obtain a Guaranteed Student Loan because of lack of credit history and lack of participation by local lending institutions. Additionally, CETA funding is limited.

Job Skill Knowledge. There was no correlation between the "hands-on", or scored shop experiences and student retention in the area of Auto Mechanics and Building Trades. It was evidenced that students scoring high on orientation activities in Business Education had a higher retention rate.

Motivation; the need for achievement and work awareness, appeared to affect student retention. Perhaps research in the category of work motivation is warranted.

CONCLUSION

The Specific Career Orientation Evaluation has had a positive impact on potential students and staff. The project has provided a structure for vocational student enrollment.

The drop-out rate is still too high at Gateway, but enrollment has substantially increased during the last two years. Students have received more information and guidance than ever before.

APPENDIX

Gateway Vocational Technical School

State of Arkansas
DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
BOX 3350, BATESVILLE, ARKANSAS 72501

Please attend orientation for _____
_____. It is necessary for all new students to attend an orientation session.

This is an opportunity for you to learn more about your selected area. Orientation will include:

Meeting your instructor(s)
Touring the classroom area
Examining the textbooks
Sampling and performing classwork
Exploring the employment outlook in your selected area
Participating in an individual conference

We at Gateway feel that this final enrollment step will be helpful to you in your career planning. If you are unable to attend, please contact us at 793-7581.

I am looking forward to seeing you!

Sincerely,

GATEWAY VOCATIONAL TECHNICAL SCHOOL

Marilyn Bryant
Score Coordinator

Gateway Vocational Technical School

State of Arkansas
DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
BOX 3350, BATESVILLE, ARKANSAS 72501

Dear

Gateway Vocational Technical School has scheduled you to attend pre-enrollment orientation and/or take the General Aptitude Test Battery (G.A.T.B.) at the following time:

ORIENTATION _____

G.A.T.B. _____

Both of these are requirements before entering classes at Gateway Vo-Tech School.

If you are unable to attend either of these, please contact us at 793-7581.

We look forward to seeing you at this time!

Sincerely

GATEWAY VOCATIONAL TECHNICAL SCHOOL

Marilyn Bryant
Counselor

SAMPLE ORIENTATION EVALUATION

NAME AND ADDRESS	EDUCATIONAL BACKGROUND	HANDS-ON ACTIVITY SCORES (DEPARTMENTS WILL VARY)	SPECIAL NEEDS (HANDICAPPED, TRANSPORTATION)	G.A.T.B. SCORES OAP HIGH LOW MED	FINANCIAL AID	COMMENTS

1979-80 VOCATIONAL TECHNICAL SCHOOL ENROLLMENT
AND LEAVER DATA

SCHOOL	*CURRENT ENROLLMENT	NUMBER AND PERCENT OF STUDENTS ENROLLED WHO COMPLETED		NUMBER AND PERCENT OF STUDENTS ENROLLED WHO DROPPED PRIOR TO COMPLETION	
		NUMBER	%	NUMBER	%
Rice Belt	85	33	44	34	40
Forest Echoes	80	46	57	24	30
Twin Lakes	201	133	66	28	13
Petit Jean	470	264	56	147	31
Great Rivers	104	48	46	43	41
Ark. Valley	273	174	63	54	19
Quapaw	208	111	53	82	39
Red River	294	112	38	138	46
Ouachita	231	114	49	83	35
Gateway	142	89	62	39	27
Ozarka	157	77	49	50	31
White River	163	81	49	67	41
Pines	359	165	45	97	27
Cotton Boll	240	111	46	97	40
Delta	215	119	55	67	31
Rich Mtn.	114	52	45	37	32
Pulaski	424	251	59	71	16
Black River	239	144	60	73	30
Crowley's Ridge	332	112	33	130	39
Cossatot	140	60	42	46	32
Oil Belt	179	127	70	48	26
Northwest	207	138	66	47	22
Foothills	246	124	50	95	38

*Current Enrollment YID Minus Carryover

SAMPLE ORIENTATION ACTIVITIES

AUTOMOTIVE MECHANICS

The purpose of these activities is to provide the potential student with additional course information. These exercises are not designed to keep you from entering the program, but to help you make a better career choice.

COURSE OUTLINE

UPON COMPLETION OF THE COURSE THE STUDENT WILL HAVE A KNOWLEDGE OF DIAGNOSIS AND REPAIR OF THE FOLLOWING AREAS OF AUTOMOBILE MECHANICS.

I. Engines

- A. Re-Ring
- B. Timing Chains and Gears
- C. Crankshaft
- D. Cylinder Heads and Valves
- E. Oiling Systems
- F. Cooling Systems
- G. Construction and Design

II. Drive Trains

- A. Manual Transmissions
- B. Automatic Transmissions
- C. Differential
- D. Propeller Shaft and U-Joints

III. Tune-Up

- A. Fuel Systems and Manifolds
- B. Ignition Systems (conventional and transistor)
- C. Distributors
- D. Use of Oscilloscope
- E. Cylinder Testing
- F. Emmission Control

IV. Front End and Brakes

- A. Suspension Systems
- B. Front End Alignment
- C. Steering Systems and Gears
- D. Wheel Balancing
- E. Power Brake Systems
- F. Disc Brakes
- G. Drum Brakes
- H. Overhauling Wheel and Master Cylinders
- I. Resurfacing Brake Drums and Rotors

V. Electrical and Air Conditioning

- A. Starting Systems
- B. Charging Systems

C. Wiring Systems
D. Lights and Gauges
E. Accessories
F. Refrigeration Fundamentals
G. Charging and Servicing Air Conditioning Systems

COURSE INFORMATION

TUITION COST: $120.00 annually (can be paid quarterly $30)

BOOKS: necessary for the course

7th Edition, Crouse, Automotive Mechanics
Work Book
Study Guide

COST OF BOOKS: approximately $25.00

HAND TOOLS ARE FURNISHED BY THE DEPARTMENT; however, students should consider acquiring their own tools before job placement.

Classes begin promptly at 8:15 a.m. and end at 3:00 p.m., Monday through Friday with a fifteen minute morning break and approximately a thirty minute lunch scheduled.

Regular and prompt attendance in all classes is compulsory. Class rolls will be checked and records of attendance will be kept by the instructor and in the office of the Assistant Director for Instruction. After three unexcused absences in the same quarter, the student will be placed on probation for the remainder of that quarter. The fourth unexcused absence in a quarter will result in suspension from the course.

A student who has been terminated for poor attendance will be counseled and may be permitted to re-enroll at the beginning of the next quarter if there is room in the class and his attitude has improved.

Two tardies will constitute an unexcused absence. A student will be considered tardy when he/she is late to class in the morning, returning to class following break time, returning from lunch, or if he/she leaves before class is over.

COURSE INFORMATION
(Continued)

Students may be excused from class because of personal illness or serious illness in the immediate family.

A student voluntarily withdrawing from training must report to the Assistant Director for Instruction's office for proper termination procedure.

A high school diploma is not required, but it is very desireable for job placement; also a good background in mathematics, English, and business arithmetic would be a great asset in the course.

COURSE DESCRIPTION

Daily there is approximately one hour spent in classroom learning theory and viewing films, slides, and other types of visual aids. Approximately five hours are spent in the shop area daily learning by hands-on experience. Students progress at their own rate of learning in five major areas of automobile repair. Students will be rotated from one area of repair to another once they have met the objectives set up by the instructor. The five areas are engines, transmissions and drive trains, front end and brakes, tune-up, and electrical and air conditioning.

Vehicle maintenance is also stressed, and we allow students to train for parts stores and dealer parts departments if they are interested in those areas. The course also helps students learn the value of used cars and things to look for in the selection of good used cars.

We have many machine shop operations primarily for the more advanced students. In our shop, we are able to rebore engine cylinders, resurface brake drums and rotors, mill cylinder heads, replace valve guides, grind valves and seats, knurl pistons and valve guides, regroove pistons, and other machine shop operations. Safety is stressed and practiced on every task in the shop area.

We allow each student, after some advancement, to practice acting as shop foreman; writing work orders and assisting other students on jobs. Usually each student will act as shop fore-

man for a week at a time.

After considerable training, we have several dealers and independent garages which allow advanced students to go in their shops and work with them for a period of two or three days to try and assist the student in learning the actual job requirements.

JOBS AVAILABLE

Prospects for jobs locally are usually very good. We get numerous calls each year seeking to employ our trained students. Demands are high locally for good service station attendants, general mechanics, partspersons, and specialized mechanics trained in front end alignment, brakes, automatic transmissions, and other specialized areas.

The skilled mechanic can and does perform a wide variety of jobs on many different makes and kinds of vehicles. Their duties include disassembling and overhauling engines, transmissions, clutches, rear ends, and other parts of the car as well as grinding valves, adjusting brakes, and aligning front ends.

Although the mechanic's chief skill is the ability to find the cause of faulty operation using technical know-how together with testing devices, a mechanic first locates the defect and then replaces or repairs it.

LOCAL SALARIES

Local salaries are widely variable. Many garages like to have their employees on a commission basis whereby the more work performed the more money received. Others have a straight salary type of pay or hourly wage. A trained student can expect to start at about $3.00 hourly and progress upward as they learn more skills.

ACTIVITY I

Place the most likely answer in the column to the left.

_____ 1. The front end riding height can be readily changed on (a) Ford, (b) Chevrolet, or (c) Plymouth.

_____ 2. Most modern car engines have hydraulic valve lifters. True or False?

_____ 3. Mechanic A says all engines have timing chains; Mechanic B says some engines have timing gears. Who is right (a) Mechanic A or (b) Mechanic B?

_____ 4. An automotive electrical system operates on: (a) A.C. current or (b) D.C. current?

_____ 5. All 12-volt conventional ignition systems have some type of ignition resistor. True or False?

_____ 6. Changing point dwell also changes initial timing. True or False?

_____ 7. On an open differential when you hold one wheel, the other wheel (a) stops, (b) speeds up, or (c) stays the same.

_____ 8. All automobiles have drum type brakes. True or False?

_____ 9. When a camshaft in an engine turns twice, the crankshaft turns: (a) one time, (b) two times, or (c) four times.

_____10. When an automatic transmission pulls in all forward gears but has no reverse, the problem could be the front pump. True or False?

ANSWERS TO ACTIVITY I

1. C
2. True
3. B
4. B
5. True
6. True
7. B
8. True
9. A
10. True

ACTIVITY II

REFERENCE MANUAL

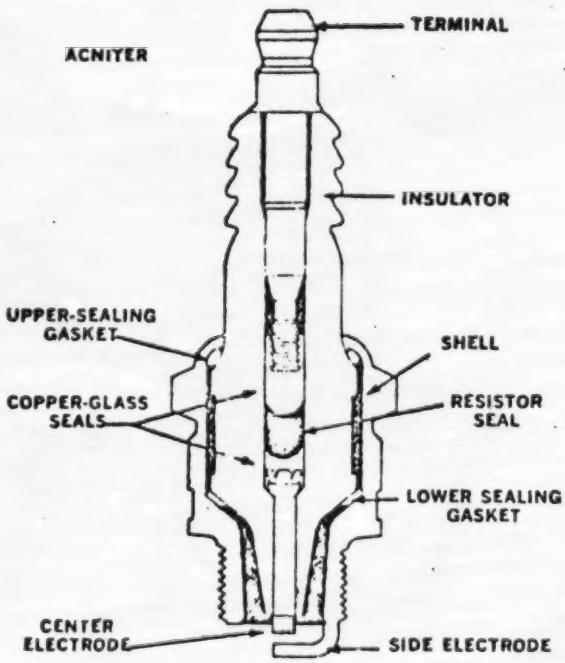
You are working on a 1975 Chevrolet, and you need to know the proper torque of the head bolts on a 350 V8 engine with a 4-barrel carburetor.

Consult the reference manual "Domestic Mechanical" to find the proper specifications.

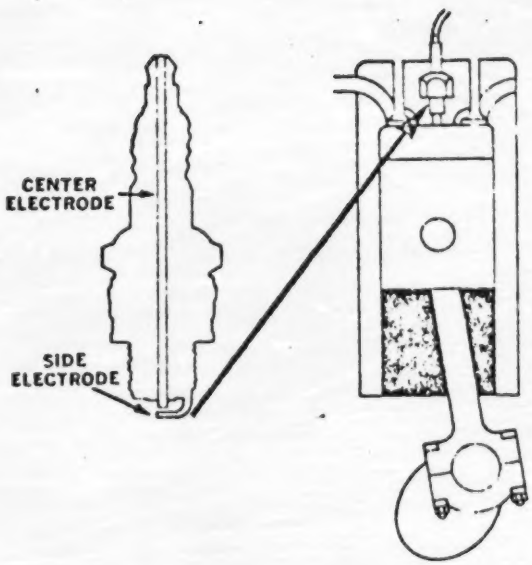
Specifications: _____

ACTIVITY III

GAPPING SPARK PLUGS



The ten parts of a modern resistor spark plug are shown above as assembled into a completed product, ready to spark millions of times under conditions of great heat and pressure.



When current is passed through the spark plug it jumps a gap between the electrodes and ignites fuel in the combustion chamber.

The spark plug fits into the combustion chamber as shown here. Ignited by the spark, a mixture of fuel and air in the cylinder expands rapidly and pushes the piston down for a power stroke.

Prepared by _____ Date _____

INSTRUCTOR'S LESSON PLAN
Related Technical Information

Unit 1
Lesson A

SUBJECT: The Spark Plug For The Internal Combustion Engine

AIM: (or purpose): Instruct and demonstrate the filing and regapping of a spark plug.

TEACHING AIDS: Handouts showing parts of spark plug and showing pictures of spark plug being gapped.

MATERIALS: Spark plugs, gap gauge, and small flat file

REFERENCES: Champion Automotive Service Manual 1974

GAPPING SPARK PLUGS

I. PREPARATION (of the learner)

A new spark plug, properly gapped, requires a minimum amount of voltage to fire. One of the reasons voltage requirements is low is due to the sharp edges of the new electrodes. A new spark plug usually has a voltage requirement from 7KV at idle to 10KV under acceleration. After several thousand miles, the electrodes become somewhat rounded and, in addition, the gap becomes wider . . . causing voltage requirements to rise. If you merely blast the plug and reset the electrode gap, you may be surprised to find the voltage requirements rise even higher. At idle, to about 10.5KV, and under acceleration, to about 14KV. (CONT)

II. PRESENTATION (of the information)

INSTRUCTIONAL TOPICS THINGS TO REMEMBER TO DO OR SAY

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1. Hold the spark plug in your left hand.
2. Hold the gap gauge in your right hand.
3. Hook bending tang of gap gauge on side electrode.
4. Bend side electrode away from center electrode sufficient to insert ignition file.
5. Still holding spark plug in left hand, take file in right hand, file both the center and side electrodes flat to restore clean, sharp edges.

6. Reset gap to manufacturer's specifications .030 by bending only the side electrodes. Do not exert pressure on the insulator or center electrode.

III. APPLICATION (drills, illustrations, analogies, oral questions, or assignments)

Have a student show and tell instructor how to file and regap a spark plug.

Have a student show and tell another student how to file and regap a spark plug.

Each student teaches another student.

IV. TEST (final check on student's comprehension of material presented)

Have students as individuals to file and regap a spark plug.

Suggested Reading for Student: Automotive Mechanics, Page 316 Section 3314

The Next Lesson is: Removal and Installation of Spark Plugs